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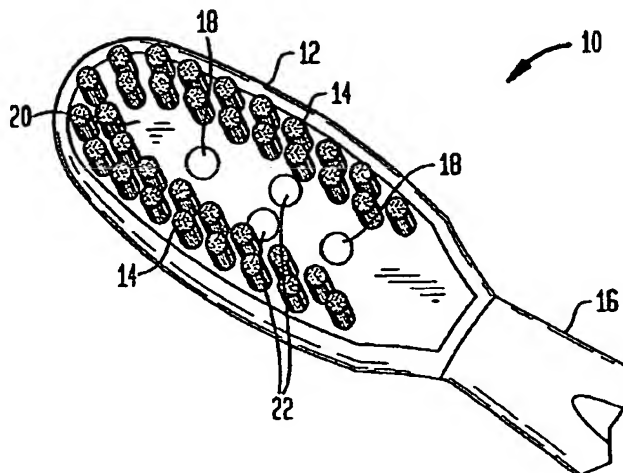
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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: LIGHT EMITTING ORAL APPLIANCE AND METHOD OF USE



(57) Abstract: Oral phototherapy applicators are disclosed that are sized and shaped so as to fit at least partially in a user's mouth with a plurality of bristles of elongate shape coupled to an apparatus body. The applicators can be adapted to brush the user's teeth and further include at least one radiation emitter to the body to provide phototherapeutic radiation to a portion of the oral cavity other than tissue in contact with the bristles. In one embodiment, the phototherapy emitter irradiates both a region of tissue in contact with the bristles and a portion of the oral cavity that is not in contact with the apparatus. For example, the apparatus can include at least one emitter that irradiates tooth tissue in contact with the bristles and gum tissue surrounding the tooth tissue.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/003951

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61N5/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N A46B A61Q A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 1 590 283 A (CATLIN DE FOREST B) 29 June 1926 (1926-06-29)</p> <p>page 1, column 2, line 58 - line 64 page 1, column 1, line 1 - line 5</p> <p style="text-align: center;">-/--</p>	<p>1,7,14, 44,46, 55,90, 101,144, 145,171, 183</p>



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- \*&\* document member of the same patent family

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# INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/10046 A (BIEL MERRILL A ; ADVANCED PHOTODYNAMIC TECHNOLOGY (US)) 4 March 1999 (1999-03-04)	1-3,7, 14,26, 29,30, 43-46, 55, 85-92, 101, 128-132, 144,145, 167-169, 171,183
	page 10, line 15 - line 28; figures 11-14	
X	US 6 471 716 B1 (PECUKONIS JOSEPH P) 29 October 2002 (2002-10-29)	1-3,7, 14,26, 29,30, 43,44, 46,55, 85-87, 89,90, 92,101, 128,129, 144,145, 167-169, 171,183
	column 11, line 63 - column 12, line 65; figure 3	
X	WO 98/06456 A (LIGHT SCIENCES LP) 19 February 1998 (1998-02-19)	1-3,7, 14,26, 29,30, 43,44, 46,55, 85-87, 89,90, 92,101, 128-130, 132,144, 145, 167-169, 171,178, 183,206, 210
	page 3, line 4 - line 32 page 5, line 5 - line 14	
	-/-	

# INTERNATIONAL SEARCH REPORT

In            Application No  
PCT/US2004/003951

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 927 544 A (ALTSHULER GRIGORY BORISOVICH) 7 July 1999 (1999-07-07)	1,4-9, 13,14, 16,21, 25, 31-33, 41,47, 51-57, 59-65, 69,72, 73,83, 93, 97-108, 115,116, 126, 136-148, 151, 153-155, 165,172, 176-184, 186-188, 191,193, 194,205, 206,210
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	column 2, line 6 - line 66	
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	column 5, line 46 - column 2, line 27; figures 1,3	
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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2004/003951

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 086 363 A (MORAN KELLY ET AL) 11 July 2000 (2000-07-11)  column 4, line 40 - line 47	1,4-6, 32,47, 52,53, 61,93, 98-100, 105,106, 140,142, 143,172, 181,182, 205,206
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nal Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 030 090 A (IMANAKA KOICHI ET AL) 9 July 1991 (1991-07-09)	1,6, 8-11,13, 32,47, 61-64, 66-70, 73,93, 98, 105-109, 111-113, 116,140, 146-148, 150,151, 154,172, 177, 186-191, 194,195, 205,206
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Y	paragraph '0028! - paragraph '0034!	293-295
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## INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	US 5 171 564 A (NATHOO SALIM A ET AL) 15 December 1992 (1992-12-15) column 3, line 55 - line 57 column 4, line 22 - line 27 -----	293,295
Y	US 2002/018754 A1 (SAGEL PAUL ALBERT ET AL) 14 February 2002 (2002-02-14) paragraph '0038! -----	294
X	DE 198 03 460 C (DORNIER MEDIZINTECHNIK) 12 August 1999 (1999-08-12)  abstract; figure 1 -----	1,83,84, 126,127, 165,166, 184,185
X	US 4 784 135 A (BLUM ET AL) 15 November 1988 (1988-11-15) column 4, line 31 - line 35; figure 1 -----	1,15

# INTERNATIONAL SEARCH REPORT

national application No.  
PCT/US2004/003951

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 211-274, 288-290  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
1-17, 21, 25-35, 41, 43-47, 51-77, 83-93, 97-120, 126-132, 136-159, 165-172, 176-199  
205, 206, 210, 291-296
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☒ No protest accompanied the payment of additional search fees.



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 211-274, 288-290

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2, 3, 7, 14, 26-30, 43-46, 55, 85-92,  
101, 128-132, 144, 145, 167-171, 183

Oral phototherapy applicator having specific shape  
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2. claims: 4, 16, 33, 52-54, 56-59, 99, 100, 102, 103, 142, 143,  
181, 182

Oral phototherapy applicator having a specific spectrum  
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3. claims: 18-20, 36-40, 78-82, 121-125, 160-164, 200-204,

Oral phototherapy applicator having means for applying or  
extracting heat  
---

4. claims: 5, 6, 8-13, 15, 21, 25, 31, 32, 41, 47, 51, 60-74, 83,  
84, 93, 97, 98, 104-117, 126, 127,  
136-141, 146-156, 165, 166, 172,  
176-180, 184-196, 205, 206, 210

Oral phototherapy applicator having means for directing or  
guiding radiation  
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5. claims: 17, 34, 35, 75-77, 118-120, 157-159, 197-199

Oral phototherapy applicator having monitoring means  
providing feedback  
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6. claims: 22-24, 42, 48-50, 94-96, 133-135, 173-175, 207-209

Oral phototherapy applicator having means for additional  
therapy  
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7. claims: 275-287, 297

Method of whitening teeth  
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8. claims: 291-296

Tooth-whitening film  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/003951

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